

# canadian *wildlife*

## **Year** *of the* **Monarch**

Our series on  
Canada's most famous  
butterfly begins

## **WHICH WAY IS UP?**

New science  
rethinks the  
origins of bird  
migration

# **Reflections** *of* **Nature**

The judging is finished for CWF's annual photo  
contest — and the results are spellbinding



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From CWF 

# Welcome to 2015

**H**appy New Year, everyone, and welcome to the first issue of *Canadian Wildlife* for 2015. In keeping with tradition, we've devoted 10 pages of this issue to publishing the winning photographs from CWF's annual Reflections of Nature Photo Contest. I'm always impressed by the range and quality images we receive, but this year's entries — all 3,700 of them — truly raised the bar. So, congratulations to all participants for sharing your experiences of the wild with CWF supporters and *Canadian Wildlife* readers. Encouraging people to connect with nature is a core mandate for the federation, and your participation in the Reflections of Nature contest is inspiring.

Staying on the photo theme for a moment, I'd also like to introduce our new back-page feature, View Finder (page 46). We're collaborating with Wayne Lynch, one of Canada's best-known wildlife photographers, to produce this item. It features images and anecdotes — mostly Canadian, but occasionally international — collected over the course of Wayne's career. If you've ever wondered about the tales behind the images in wildlife photography, we're sure you'll enjoy View Finder.

We're also billing 2015 as the "Year of the Monarch" in *Canadian Wildlife* to promote awareness about the issues and ideas for conservation of this much-loved butterfly. Our efforts start in this issue with a feature by Brian Banks, covering the latest work on monarchs (page 20). Over the rest of the year, we'll devote one of our regular columns or departments in each issue to a monarch theme. We have a lot of interesting story ideas in the hopper, so stay tuned. In the meantime, if you have monarch news you'd like to share, please get in touch.



There's much more to enjoy in this issue. For me, highlights include Jay Ingram's column on the origins of bird migration (page 13). Traditional thinking on this subject says the migratory species we know today likely evolved from species that originated in warmer climates. A new study of bird genetics, however, is turning that idea on its head. It suggests that, at least in several cases, migratory behaviour evolved in northern regions. It's compelling stuff, and it shows we still have much to learn.

I was also taken by this issue's Local Hero column. It features an interview with Claudia Li, a young Vancouverite who is working to integrate the values of sustainability with the traditions of her own Chinese heritage. This article speaks to an important idea: we often talk about conservation in terms of big issues, such as land use, habitat protection and scientific research. But it is also intimately tied to simple choices we make everyday and the values we receive as a culture. Read our interview with Claudia, and you'll get a nuanced view on how we can integrate conservation into our daily lives and values — and how that leads to change.

Enjoy the issue.



Wade Luzny  
CEO, Executive Vice President  
Canadian Wildlife Federation



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# Field Notes

Calendar + Briefing + Research + Quotable + By The Numbers

January



**Mid-January** Breeding season gets underway for swift foxes and will last through to March. The average litter will have four or five pups.

**Early January** The last of the 2013-14 generation of polar bear cubs are being born in maternity dens. Most female bears will have twins.



## BRIEFING

### Good Fences Make Safe Neighbours

In northern B.C., conservationists are building barriers to reduce the risk predators pose for struggling caribou herds

**Scott McNay** felt relieved as he stepped out of the helicopter following a wildlife survey this past fall near Mackenzie, B.C., in the South Peace region of the province. He spent the previous few hours flying over alpine lakes and mountaintops as part of a project to check up on five caribou calves from the Klinse-Za and Scott herds. McNay discovered that all were alive and well — an important finding. For a pair of herds with barely 50 animals between them, each life saved matters.

“That helps me feel better about the project and that we have done the right thing,” says McNay, an ecologist with

Wildlife Infometrics, an integrated resource-management company based in Mackenzie.

The Klinse-Za and Scott herds, like other populations of woodland caribou in British Columbia and Alberta, have suffered steep declines in recent decades. A primary issue is increased predation during the first few weeks of their lives by other species, notably wolves.

The phenomenon is relatively new, a product of increased resource development that has made it easier for wolves to access caribou habitat along new roads, paths and cut lines through the forest. In the case of the Klinse-Za and Scott



**Late January**  
Most white-tailed deer bucks have shed their antlers for the season, although some will not shed until March.



February



**Mid-February**  
The first of two annual breeding seasons is ending for eastern grey squirrels. The second season will begin with June.

ISTOCK. ROBERT MCCAW. ISTOCK

## > BRIEFING

herds, the predation issue is being met with an innovative approach to conservation developed between McNay's group, the West Moberly and Saulteau First Nations, and government and industry partners.

Part of the program involves limited hunting of wolves. Its centerpiece, however, is the establishment of a maternal pen where pregnant females can give birth and raise their calves free from predation during the most vulnerable periods of their lives.

This past March, the partnership team captured 10 pregnant females from the Klinse-Za and Scott herds and held them in the pen. About 100 days later, in July, nine radio-collared calves were released along with their mothers, just as the calves had reached between four and six weeks of age.

Even with the head start, however, the caribou did not make an easy re-entrance to the wild. Within the first few days, many were chased by wolves and three calves and a cow were killed. In one dramatic event, a mother lost her calf to a wolf before being chased and forced to stand in the middle of a lake for nearly 12 hours. When she tried to leave the lake, she was also killed. "It was really devastating," McNay says.

In spite of the challenges, the project is being heralded as success, and rightly so. Estimates put the ratio of calves lost to predation in Klinse-Za herd as high as 90 per cent in recent years. With the penning project, more than half have survived in 2014, "If we had done nothing, we would not have a herd at all by the summer 2015," McNay says. The West Moberly and Saulteau First Nations and other project partners have also lauded the program.

As for the five calves born in 2014, McNay expects they will survive through this winter, now that they are larger and can climb to higher, snow-covered elevations where wolves won't follow. Plans are also under way to run a second maternal-penning program this winter.

In the longer term, however, conservation of the Klinse-Za and Scott caribou herds—and others facing the same challenges—will require a more broad-based approach, McNay says. "There has to be a significant effort to restore habitat for the caribou so that we don't need either the penning or the heavy-handed management of predator removal."

— ISABELLE GROG

## RESEARCH UPDATE

# It Was All a Set-Up

## RESEARCHERS TURN TO DEADLY DECOYS TO FIGHT EMERALD ASH BORERS

Call them "female fatales"—with an emphasis on fatal. To help combat the spread of emerald ash borers, a team of international researchers has developed a decoy female insect that delivers a deadly electric shock when males land on them to mate.

The design comes from a multi-disciplinary group that developed two prototypes—one using a 3D printer and another using a dead female beetle to make a mold and then cast decoys that have the surface detail of the beetle up to the nanoscale level. Both models attracted male emerald ash borers in field tests. But the researchers found that those with greater detail were more successful at having males land on them long enough to deliver their deadly shocks.

The researchers say their next steps will be to improve the decoys and develop them as early warning tools for detection of ash borers and other harmful insects. First discovered in North America in 2002, emerald ash borers have since killed millions of ash trees in both Canada and the United States.



## TREES AT RISK

*Emerald ash borers have killed millions of trees in North America. The inset here shows a close-up of the damage they do.*



QUOTABLE

“There are **10 million** viruses in a drop of sea water, so discovering the virus associated with a marine disease can be like **looking for a needle in a hay stack.**”

Ian Hewson, lead author of a new report in the *Proceedings of the National Academy of Sciences* on starfish wasting syndrome. The study says the syndrome, which has killed millions of starfish on North America's west coast, is likely caused by newly discovered virus called “sea star associated densovirus.”



**Late February** The very first canvasback ducks are starting to land in southern Ontario, returning from wintering grounds primarily around Virginia and Maryland.

BY THE NUMBERS

# Walk the Talk

**POLAR BEARS USE SCENT TO COMMUNICATE—ONE STEP AT A TIME**

They live in an environment with no trees and little in the way of exposed large rocks to rub up against. So how do polar bears use scent to mark territories or connect with mates?

It turns out, they have scent glands in their feet, which means they leave messages for other bears every time they take a step, according to Megan Owen, a research scientist at the San Diego Zoo Institute for Conservation Research.

And when you tally the numbers behind polar bear movements, those steps add up to a lot of communication.



**8,333**

Approximate number of steps a polar bear will take in one hour of walking, based on an average stride of 60 centimetres.

**5**

The typical pace of a walking polar bear in kilometres per hour.

**125,000**

The typical area of a polar bear's home range, measured in square kilometres. The area is almost double that of New Brunswick (73,000 square kilometres).

**3,415**

The average total annual movement, in kilometres, for a polar bear in the Beaufort Sea region, where bear movements have been tracked over many years.

**30 to 90**

The length of a polar bear's stride in centimetres.





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**CLASS IN SESSION**

*Photographer Cody Greco snapped this image of white-tailed deer at the Mississauga campus of the University of Toronto, proving once again that the distance between urban life and wild life often isn't far. "It took a long time and a lot of patience to get so close to these animals," Cody says. "However, it was very well worth it."*









# Someone Had to Blink

Here's a chicken and egg conundrum: which comes first, electric cars or charging networks to support them? Kent Rathwell just powered through that problem

By Canadian Wildlife Staff Photo by Matt Smith

**If** you happen to be driving through Crossfield, Alta., about 50 kilometres north of Calgary, take a moment and swing past the local Petro-Canada station. You'll see the usual stuff—a large asphalt apron, bays and gas pumps. If you look closely, you'll also notice a charger for electric cars. If you happen to be driving one, you'll be able to power up, right there in the heart of Canada's oil industry. For free.

Thank Kent Rathwell, president and founder of Sun Country Highway, for the boost. While you're at it, also thank him for more than 1,000 charging stations his outfit has installed across the country, making an emissions-free drive from coast to coast not merely possible, but actually feasible.

When it comes to electric vehicle charging networks, "Canada is a leader by a long shot," says Rathwell, a Saskatoon-based entrepreneur who is also

CEO of Sun Country Farms, a birdseed-making firm that is Saskatchewan's first emissions-free manufacturer. "There is no other electric-vehicle infrastructure like this in the world."

Rathwell can make that claim by many measures. For starters, Sun Country's charger network is the longest of its kind in the world. It also proves that electric cars can operate—and operate well—in cold and sometimes rugged environments.

Its most remarkable feature, however,



is how it has been built: by individuals who share Rathwell's vision and joined his effort, one charger at a time. Sun Country Highway provides the chargers — sometimes for free, sometimes at fee for installation, sometimes through sponsorships — to whoever wants them, be they restaurants, hotels, parking lots, retail stores, even gas stations. It's then up to the owners of the charging stations to decide how to use them. Some may offer the service to customers, others may give it away because, well, there's a lot to like about electric cars.

For Rathwell, grassroots development of the network has been critical to its success. Had the job been left to top-down government management, as infrastructure projects usually are, development would have been larger, slower and more complicated. With a bottom-up approach, the network has instead grown organically and proved itself. Thus, future investment, public or private, can be more nimble, targeted and likely to succeed.

More important, though, the highway breaks through a major challenge in the broader adoption of electric vehicles. Electric vehicles "have always been around in one shape or form, but not to a big degree," Rathwell says. "Why would anyone build an electric vehicles if there were no place to charge them? And why would you put chargers out there if there were no electric vehicles? Somebody had to blink."

And so, Rathwell and his group blinked, and continue to do so. The Sun Country Highway — celebrated in 2013 and 2014 with the cross-country E-Mazing Race events — is expanding rapidly, and Rathwell is developing business plans to make its ongoing work economically self-sustaining.

As for the network itself, it is making inroads in the U.S., especially along the Pacific Coast. In November, Sun Country also announced a partnership to bring its model to Iceland.

For Rathwell, that's all good news for the future of electric transportation. More importantly, though, he sees it as a message of hope. "This was built out by average people, small business and families," he says. "If average people can do this, what else can they do?" 🐾

# They Went That-a-Way

Traditional thinking holds that bird migration began as a south-to-north movement. Maybe we've got that backwards

By Jay Ingram



## WHERE DOES THE JOURNEY START?

*New research in bird genetics is turning the story of migration on its head—at least in many cases.*

**AT** this time of year, three-quarters of all the birds we see in Canada are still hunkered down in their southern overwintering habitats, not yet feeling the hormonal surge that will trigger the northward leg of their migration. But migrate they will, and soon.

We're familiar with the tales of their incredible migratory feats, but what about this question: why did migration start?

We have all kinds of birds that don't bother flying south and they manage quite well. In fact, the 2012 report *The State of Canada's Birds* made it clear that year-round residents are doing better than the migrators. And of course there are plenty of tropical birds that never come north either, so why bother?

Food supply is the No. 1 factor. Fruit, nectar and insect eaters can't make a living in Canada in the winter and so are forced to go where they can. In 1904, Percy A. Taverner, an architect



#### GOING MY WAY?

*New research may help explain why species like starlings are both migratory and sedentary*

and the first ornithologist at the then National Museum of Canada, analyzed migration by beginning with the food issue, but then asked the next question: having embraced the good life in the bountiful tropics, why would birds ever bother to fly north again? Because there are food issues in the south, too. He painted a picture of an overpopulated tropical region incapable of supporting the resident birds plus all the migrants from Canada, especially when breeding began in the spring.

Taverner imagined a slow, gradual expansion of home ranges out of the tropics, prompted by local food pressures — perhaps only a kilometre or so at a time, but eventually leading to species genetically obliged to make two-way journeys.

This “out-of-the tropics” notion has been behind most of the speculation about migration’s origins ever since, albeit with much additional detail.

So for instance: 50 per cent of migrants are closely related to, if not identical with, species that live year-round in the tropics. (Long-lost cousins?) Not only that: those resident species, which include kingbirds, tanagers and thrushes, also indulge in what you might call “migration lite,” moving up the sides of mountains, or cross-country, as fruiting and flowering plants bloom then recede. It seems but a short step to extend such wandering in a purposeful, northward direction.

However, nothing is completely clear-cut. This resident wandering that might be a prelude to all-out migration doesn’t include all birds — insect eaters in the leafy understorey aren’t under the same pressure; their food is available year-round, so they don’t move.

And more: there was a long-held belief that migrants were, at best, subordinate to resident birds in the tropics, flitting here and there and grabbing what they could in marginal habitats. But this observation is also uncertain: migrants are found everywhere, although numbers vary. Some species go so far as to establish a territory in the tropics and even return to it the following year.

#### FACT FILE

## Amazing Journeys

- Arctic terns fly 80,000 kilometres annually during migrations between Arctic and Antarctic habitats.
- Some three billion land birds migrate to Canada's boreal forest each spring.
- Hawks, swifts and waterfowl tend to migrate during the day. Songbirds travel at night.
- Migratory birds tend to have longer, more aerodynamic wings than non-migrators.

Why am I raising these uncertainties? Because there’s another possibility: migrating birds could have originated in the north and established southward migration to ensure adequate food. If that’s true, then the northward leg of their migration is a return home.

If that’s the case, then Taverner’s idea of an overcrowded tropics prompting return flights isn’t needed. Maybe birds return because they can lay bigger egg clutches in temperate zones. Well, yes they do, but survival is reduced too, so those two factors balance each other.

So what is the evidence for this possibility that migrants might originally have been northern species? A recent paper in the *Proceedings of the National Academy of Sciences* combined elegant and elaborate genetics with tons of computation and claimed, by tracing hundreds of species histories, that twice as many groups of migrators originated in the north than the tropics. The paper added that some major lineages of sedentary tropical birds have descended from northern ancestors.

While the study was touted as showing that migration started in the tropics, the ratio of tropical-to-northern origins suggests it has gone both ways.

One scenario I like is that every bird has some migration tendency in it, but often it is below a critical threshold. Birds will slowly disperse and extend ranges in order to maintain adequate diets. If the new areas are sufficient in resources, they will stay. Otherwise, they resort to their migratory toolkit and move on. This helps make sense of the fact that many species, including starlings and the Canada Goose, are neither strictly migratory nor sedentary.

So 110 years after Taverner, we still don’t have a definitive answer. Add the other mysteries of migration — the magical navigational abilities, the mind-boggling metabolic feats, the complexity of the genetics that underlies the ability of first-year birds to find their way to their tropical locale — and you wonder when we will understand it all. 🌀





# Some Kind of Monster?

It was huge. And apparently vicious — maybe worse than a *T. rex*. But when the mystery of *D. mirificus* was finally solved, things just got weird

By Alanna Mitchell Illustration by Pete Ryan

**It was the coldest of dinosaur cold cases:** a pair of frighteningly large arms and hands, but little else. And for nearly 50 years after those massive arms were discovered in Mongolia, scientists were baffled.

The creature was clearly a meat eater, like the *Tyrannosaurus rex* and its Mongolian cousin, *Tarbosaurus bataar*. But its arms were 2.4 metres long, a record for any known animal that walks on its hind legs, and more than double those of *T. rex*. If the mystery dinosaur's limb proportions were like the *T. rex*'s, this creature would have been gigantic.

And not just big, but ferocious, with vicious claws. This terrifying picture led to the creature's name, *Deinocheirus mirificus*, which, translated from Greek and Latin, means "weird horrible hands."





IN PROFILE

## A Little About Phil...

- Canada Research Chair in Dinosaur Paleobiology at University of Alberta
- Research includes study into the origins of birds
- Has named 25 new dinosaur species since 1975
- International research has taken Currie to Mongolia, China, Antarctica and more

For years, scientists tried to find the elusive bone bed the giant hands had originally been dug out of in 1965, hoping to uncover more bones from the same skeleton or from another creature of the same species. But with only a hand-drawn map to rely on, they did not succeed.

Enter Phil Currie, Canada research chair in dinosaur paleobiology at the University of Alberta in Edmon-

ton. He's spent a career investigating the last of the dinosaurs, the ones that evolved in the millions of years before they went extinct. He's also spent a lot of time digging in the dinosaur goldmine that is Mongolia's Gobi Desert, and in 2009, he and a team from Korea found part of a second *D. mirificus* skeleton in a bone bed.

Unfortunately, the bed had been savaged by poachers, something that is a problem for archeologists. The *modus operandi* of these bone thieves is to take the bits of a skeleton that will fetch the highest prices: skulls, hands, feet and claws, often leaving the rest of the scientifically precious bones smashed and scattered.

Even though it's illegal to take fossils out of Mongolia without a scientific permit, poachers do. The practice came into sharp relief two years ago when a nearly complete *T. bataar* went up for auction in New York, fetching \$1 million. The sale was later overturned, the smuggler pleaded guilty, and the skeleton was returned to Mongolia where it is the star attraction at a new dinosaur museum in the capital, Ulan Bator.

The high-profile case sounded alarm bells for dealers in dinosaur bones all over the world. They started paying more attention to the provenance of the bones, just as art dealers have been forced to do in recent decades when it comes to antiquities and works of art. Where did it come from? Was it obtained legally?

So when the word got out in the scientific community that a partial *D. mirificus* skeleton had been found, scientists started scouring the shops and websites of fossil dealers, Currie explained on the CBC radio program *Quirks & Quarks*. Eureka. A shop in Europe had the rest of the poached fossil, including one of the ferocious arms, the feet and, critically, the skull. A perfect fit. The fossil dealer donated it to Currie and the others in the name of science.

In the meantime, the partial fossil Currie and his team had dug up was being minutely examined in Korea. A unique ridge on one of its leg bones led the team to take a fresh look at a separate skeleton already in its collection, and that led to the astonishing finding that the skeleton was a juvenile *D. mirificus*.

That meant scientists had gone from a pair of weird arms to large parts of two skeletons. Now they could try to figure out more about how the dinosaur, one of the ostrich-mimicking type, lived.

It was weird in ways they couldn't possibly have imagined. Currie says it almost feels like a chimera, the creature of Greek myth made up of bits of several different animals. It was huge, but not the behemoth scientists had expected, weighing in at 6.4 tonnes (about the same weight as a *T. rex*) and measuring 11 metres in length. It used the weird arms for digging for plants and maybe fishing. The scientific team found fish scales and vertebrae in the stomach of one of the creatures.

It had a sail-like spine, hooves on its feet, stocky back legs, no teeth, a duckbill and stones in its stomach to grind food.

It's a poetic lesson in patience, determination and the power of moral suasion. But it's also a poignant lesson in humility. When it comes to dinosaurs — or indeed, the living creatures of today — we don't know nearly as much as we think. 🐾





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# Not Above the Law

Earlier this fall, wildlife officers in Nova Scotia discovered the remains of a four-year-old eastern mainland moose near a highway. The animal had fallen victim to poachers, who had stripped it of its meat, leaving its hide and head behind. Eastern mainland moose are an endangered species under Nova Scotia's provincial law, and officials with the province's natural resources department are now asking the public to help them find the poachers—a timely reminder that successful conservation programs require a buy-in at all levels of a community.





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#### ISSUE

Moose were abundant in Nova Scotia at the time of European settlement. By the end of the 1800s, however, over-hunting had driven native populations to the brink of extirpation.

A reintroduction program in the 1940s, using moose from Alberta, has established a robust population on Cape Breton today. Native mainland moose have not fared as well. Their current population is estimated at about 1,000 individuals, which live in isolated pockets around the province.

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#### RISK

Eastern mainland moose populations face a variety of threats, including disease and habitat loss. Poaching is also a major threat. Its impact is hard to quantify. But ongoing efforts to enforce a 30-year-old hunting ban show that poaching remains a substantial risk for the long-term viability of moose populations. It is also closely related to other pressures on moose, notably increased human access to habitat due to road development and the popularity of off-road vehicles, such as snowmobiles and ATVs.

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#### MITIGATION

Knowledge gaps are one of the primary challenges in developing recovery programs for Nova Scotia's eastern mainland moose. And the public has a role to play in filling those gaps. Simple measures, such as reporting moose sightings, provide valuable information about how and where moose are using key habitat.

Public involvement also plays a key role in preventing poaching. Wildlife officials have used various strategies in the past, including deploying decoy moose to catch poachers. Public reporting programs, however, are the backbone of efforts to stop those who hunt illegally or violate other conservation laws.





#### MEXICAN WINTER

*About 90 per cent of North America's monarch population spends the winter in Mexico's Monarch Butterfly Biosphere Reserve. Scientists discovered the location in the 1970s.*



# Links in the Chain

Individual monarch butterflies are like atoms. Each one is a tiny particle. Together, they create a massive phenomenon — specifically, their epic migration. Conserving these iconic butterflies rests on our ability to understand how each link fits into the whole

By Brian Banks

**If you start looking for people who know about monarch butterflies, the path quickly leads south, to Chip Taylor.** A professor in the department of ecology and evolutionary biology at the University of Kansas, Taylor founded Monarch Watch in 1992, a landmark, cross-border, citizen-outreach program devoted to monarch butterfly education, research and conservation.

Since that time, Taylor has become one of North America's leading authorities on the epic orange traveller. He is an expert on monarch biology, migration and reproductive cycles, and the insect's essential food and habitat. Through Monarch Watch, he has also witnessed how these butterflies inspire tremendous public interest and support, and he's been instrumental in developing the role of citizen science in their study.

Most recently, he's become all too familiar with the grim dynamics of the North American monarch's precipitous population decline — a drop of up to 80 per cent from the 20-year average. And so the question that starts our interview is the one on everybody's mind: Just how bad is the situation out there?

"The migratory population, the migratory phenomena, is very, very vulnerable," Taylor says, gravely. "It's vulnerable because the numbers are really low, and the lower the number of overwintering butterflies, the more vulnerable the population is to catastrophic mortality due to poor survival at the overwintering sites or poor breeding seasons."

It's no secret what's doing most of the damage to monarch numbers, Taylor notes. Blame the massive loss of milkweed, the only plant monarch caterpillars eat. It's a concern everywhere, but especially in the species' core breeding range, the "monarch-milkweed corridor"



extending north from Texas through the heart of the Midwest and east and north into Canada. Without milkweed, the monarchs can't reproduce.

Milkweed's decline is tied to the introduction in the past 10 to 15 years — and current near-blanket use — of herbicides and herbicide-resistant crops in most of the same areas. The chemicals kill all the milkweed plants that used to grow in the fields and in nearby hedgerows. Intensive development of previously marginal farmland, even property previously set aside for conservation, to grow corn for ethanol has also had an impact. "We're losing at least a million acres of habitat every year," Taylor says.

It's the end of October as we talk. Within days, the fall's first flocks of migrating monarchs — five generations removed from the monarchs that journeyed north from Mexico in the spring — will start arriving and roosting on the oyamel trees and other conifers in Mexico's 56,000-hectare Monarch Butterfly Biosphere Reserve (Santuario de la Mariposa Monarca). They fly hundreds, even thousands, of kilometres from all over the eastern and central U.S. and southern Canada to get here. Although last summer's monarch counts were generally improved, it's not yet known how many butterflies will make the trip this year. The location, high in the mountains west of Mexico City, was identified by scientists only in the mid-1970s, when University of Toronto zoologist Fred Urquhart and his wife and research partner Norah Urquhart zeroed in. It's where 90 per cent of the North American monarch population gathers, in just a handful of spots, to wait out the winter in near-hibernation.

It's here, too, where Taylor sets the scene in recounting a near-miss for the species last winter, when the number of butterflies returning to the area set an all-time low. Because monarchs roost so tightly, the overwintering population is measured in terms of the forest area it covers. Last year, that was just 0.67 hectares, compared with the 1994-2014 average annual coverage of 6.39 hectares.

At that quantity, Taylor says, the monarchs were one "catastrophic" cold snap from near oblivion. He tells the story of severe winter storms in 2002 and 2004 — rain, snow and deep cold — that wiped out as much as 80 per cent of the hibernating monarchs. Yet because the total size of the population at the time was much greater, they had the capacity to rebound.

"If we had that kind of mortality last winter, I'm not sure we'd be having this conversation," Taylor says. "At .67 hectares, you take that down by 70 per cent or 80 per cent, and we wouldn't be talking about any significant monarchs at all. There would still be butterflies out there, but the vast majority of people in eastern North America would not have seen a monarch, even among those people who are interested in monarchs.

"That's the sort of thing we worry about."



**Canadians sometimes lay claim to animal species, such as moose, polar bear or the Canada goose, though they're resident elsewhere, too. But that's impossible with the monarch. It is a creature and a migratory phenomenon we share equally with the United States and Mexico, a North American story, through and through.**

That's the reason the monarch was chosen as the emblem of the North American Free Trade Agreement. It's also why efforts to save it got a potential boost last February when, at their annual summit, the three NAFTA country leaders called for a trilateral conservation plan to protect the monarch and reverse its decline. That plan is to be ready for Prime Minister Stephen Harper, President Barack Obama and President Enrique Peña Nieto at their next meeting, in Canada this spring.

Each country has a different place and significance in the monarch life cycle — and, therefore, a different role to play in its protection and recovery. Through the winter in Mexico, the insects aren't reproductive. Conservation measures there centre mostly on reforestation, sustainable forest management and protecting existing trees in the sanctuary from illegal logging.

Come spring, however, the monarchs begin to breed. And with that, the clock starts ticking. While overwintering butterflies live six months or more, monarchs in



#### KEEPING WATCH

*Monarch Watch conducts a tagging program to monitor monarch migrations. The program helps answer questions about monarch movements across North America, such as whether they fly in specific directions or use specific pathways.*





## The more we can do for monarch numbers in Canada, the more it helps with resiliency and population totals all down the line

reproductive mode have a lifespan of between 20 and 40 days. Pregnant females leaving Mexico have a short window to make the trip back to Texas and neighbouring southern U.S. states where they can find milkweed, lay their eggs and die. In these areas, and along the entire route up into Canada as the cycle repeats itself, the conservation priority switches to milkweed and breeding habitat.

An estimated 15 per cent of the total annual North American monarch population enters or originates in Canada. Most of the monarchs that first show up here are from the year's second or third generation. In turn, they and their offspring produce a fourth and fifth generation over the summer. The latter are the butterflies that are seen "staging" in large groups in trees on the shores of the Great Lakes in late summer and early fall, heeding an inner call that will carry at least some to the mountains in Mexico.

It's easy to be skeptical of high-level, political initiatives like the pending plan for the next "Three Amigos" summit. But if the first meeting of the Canadian members of the effort's trilateral working group was any indication, the simple act of getting top-calibre species experts and other key stakeholders together in the same room to hash out the steps to a conservation plan for monarchs was needed and worthwhile.

Environment Canada hosted the meeting in Ottawa in October. Earlier, it posted a draft Canadian monarch management plan to seed discussion. That report contained a short list of recommended "high priority" conservation and research actions, including enhancing monarch breeding and nectaring habitat; creating monarch- and pollinator-friendly land management guidelines for railways, power lines, roadsides and other vegetated corridors; enhancing staging site habitat along the Great Lakes; and investigating the potentially far-reaching impacts of pesticide and herbicide use.

Attendees agreed on a number of proposals that required further development. At a broad strategic level, Maxim Larrivée, head of entomological collections and research at the Montreal Insectarium, says it's clear that the biggest contribution Canada can make is to "make sure that monarchs can breed in numbers that will improve the species' chances of success." The more we can do for monarch numbers in Canada, the more

it helps with resiliency and population totals all down the line.

At the same time, as a scientist and creator of eButterfly, a citizen-science website inspired by the eBird platform, Larrivée says one of the meeting's more interesting discoveries was just how many gaps exist in their knowledge of key topics needed for a comprehensive management plan. Issues include monarch migratory pathways, breeding hotspots and even the best locations for milkweed. "It shows how research evolves when a species quickly comes to be at risk," says Larrivée. "We know what's caused the decline. Now we're asking how can we reverse that process."

Two of the areas earmarked for more fact-finding at the meeting deal with (a) determining if there is sufficient milkweed habitat in Canada today for the monarch's breeding needs and (b) gathering existing knowledge on the best landscape and plant management practices in agriculture, pipeline operations, railways and road-side management.

The second of these caught the attention of another meeting observer, Jode Roberts, a communications strategist with the David Suzuki Foundation in Toronto. In the last two years, Roberts has led the development of a butterfly and pollinator corridor through the west end of the city. In 2014, the foundation ran a local "Got



Milkweed?” campaign, which led to the sale of 4,000 milkweed plants to area residents for planting in their yards. (CWF runs similar programs, including a pledge campaign to support monarch-friendly gardens.)

While the urban corridor project is considered a success and they plan to expand it, Roberts says that as an organization, the foundation “recognizes that urban butterfly corridors alone aren’t going to bring back the monarch.”

Other corridors — such as rail, hydro, even pipelines or roads — have much bigger potential. All traverse great distances and take up a lot of landscape. And until large-scale, herbicide-dependent agriculture practices change, those corridors are “one of the logical places to quickly transform into more pollinator-friendly habitat,” says Roberts. “Management practices wouldn’t have to change much to make it work. Right now, most of these corridors are either being mowed or having pesticides and herbicides applied. So it would just take a modest shift in the management practices to accommodate more native species and to encourage milkweed and other pollinator-friendly plants.”

Modest, maybe. But before corridor owners and land managers consider these kinds of changes, they’ll want to see a clearer business case and a full explanation of the benefits and implications. To help develop that information, along with some applied scientific expertise, the foundation has teamed up with Tyler Flockhart, a migratory biologist in the department of integrative biology at the University of Guelph.

Flockhart spent several years constructing a North American monarch population model en route to his recently completed PhD. His intentions with that research (supported by CWF’s Endangered Species Fund), and in his work today, echo those of Larrivée and others at the October working group meeting — that it’s impossible to develop a comprehensive, executable conservation management plan for monarchs (or any migratory species) until you know where, in detail, they travel during the breeding season, where they do best, where they fare worst, and so on.

Flockhart’s research and his model, which he says is a compilation of about 30 years of data, goes a major step further. “It considers all stages of the annual cycle simultaneously,” he says. “When you’re talking about how a population grows and contracts, and what the factors are that influence how it grows, you need to consider things that happen on the breeding grounds, during migration and on the wintering grounds. Up until now, having all those components considered simultaneously hadn’t been done.”

Flockhart’s new work will look at different types of landscapes along corridors and conduct pilot projects to investigate the impacts and benefits

of adding milkweed. But that’s only a small aspect of the power of Flockhart’s model. “Most animals, including monarchs, are facing multiple threats,” he explains. “It’s really difficult to prioritize those. But when you’re talking about trying to prioritize conservation money or effort, that’s the information you need.”

One of his most important findings for developing action plans for monarch conservation is that the population losses occurring on the breeding grounds in the U.S. and Canada have four times the impact on the species’ overall viability as losses on the wintering grounds. “We’re not saying that things happening on the wintering grounds, or that conservation on the wintering grounds, are not important,” stresses Flockhart. But this migration that acts like a chain, and “what we’re saying is that the breaks in the chain that are happening on the breeding

grounds have a larger impact than they do on the wintering grounds.

“In a way, it’s sort of shifting away from Mexico and saying, ‘We [in Canada and the U.S.] need to pay more attention closer to home,’” he says. “Also, that our inaction undermines any efforts being made in Mexico.”



**What does Chip Taylor think of younger** guns like Flockhart and Larrivée saying there are still big gaps in monarch science — despite the fact that few insects have been so closely watched by so many for so long? Is there still a lot to figure out?

“Absolutely,” Taylor says. “This is a well, and we’re still pulling water from this well. There are still a lot of unresolved issues about how this species operates...[from] reproduction to migration to navigation to competitors and pathogens. There’s a whole lot of work out there.”

While he has time for more science, Taylor has absolutely no time for inaction. He first heard about the herbicides that were going to eliminate milkweed from agricultural fields in 2004. A year later, Monarch Watch started its monarch “way station” program, to compensate for the losses by creating mini-habitats for monarchs. Monarch Watch also took to selling milkweed plugs, with sales in 2014 totalling almost 60,000. “What I do is ground up,” says Taylor. “We work with people rather than organizations. We’re trying to engage the populace in doing some-thing positive.”

But thinking about the diminished ranks of monarchs set to face another winter of potential catastrophic loss in the mountains, he also sounds like a man who would sign on to any large-scale conservation plan, as long as it starts immediately. “We’re already at low ebb,” Taylor says. “We can’t lose another year.” 🌱





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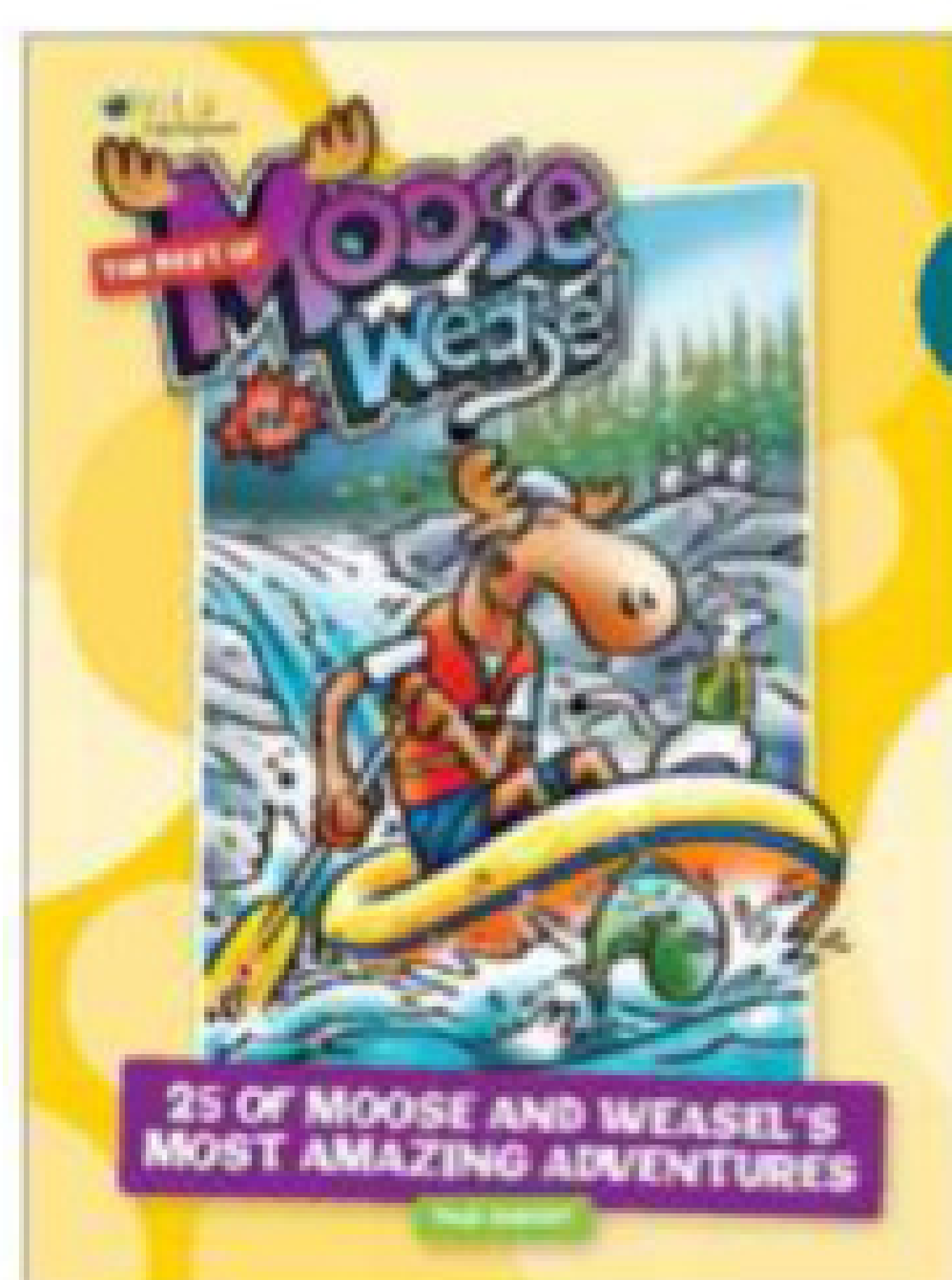
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# PICTURE THIS

IT WAS A TOUGH JOB, BUT WE'VE SELECTED THE WINNERS OF THE ANNUAL REFLECTIONS OF NATURE PHOTO CONTEST. THE RESULTS ARE A FEAST FOR THE EYES

**FIRST OF ALL**, we'd like to say thanks — a big thanks — to everybody who participated in CWF's annual Reflections of Nature Photo Contest. This year's competition drew about 3,700 entries. That's right — 3,700. From across Canada. Better yet, the entries were fantastic. Choosing the top images was a difficult job indeed. So, congratulations to everyone who participated. It was a banner year.

On the pages that follow, you'll find our choices for the best of the best, including our professional and amateur grand prize winners, as well as the winners in our five categories: Focus on Fauna, Home is Habitat, Connecting with Nature, Canadian Landscapes and Finding Flora. Our grand prize winners will receive \$500 gift certificates from the retailer of their choice, as well as one-year subscriptions to *Canadian Wildlife* magazine or *Biosphère*, our French edition. Category winners will receive HP photo printers and magazine subscriptions.

The rest of us get the real prize: the opportunity to enjoy some of the best wildlife and nature photography you'll find anywhere. Have fun.

»  
**PROFESSIONAL  
GRAND PRIZE**

*New Moon Light*  
**Victor Liu**

The Rocky Mountains are inspiring at any time. But Victor Liu's spectacular nighttime image from Medicine Lake, Alta., goes beyond the beauty of the environment. It is also a statement about our place in the natural world.





“  
AMATEUR  
GRAND PRIZE

*Marsh Wren*  
**Tom Lusk**

Taken in marsh near Ivy Lea, Ont., the inherent humour of Tom Lusk's photograph appealed to contest judges. These birds search around the stems of marsh vegetation for food. They are usually out of sight, but are known to pop briefly into view on occasion.







«  
PROFESSIONAL  
**CANADIAN  
LANDSCAPES**

*Abraham Lake*  
**Artur Stansiz**

Artur Stansiz immigrated to Canada from Poland in 2006 and settled in British Columbia, a perfect environment for his passion for landscape photography. As his winning image of Abraham Lake in the foothills of the Rocky Mountains shows, Poland's loss is Canada's gain.

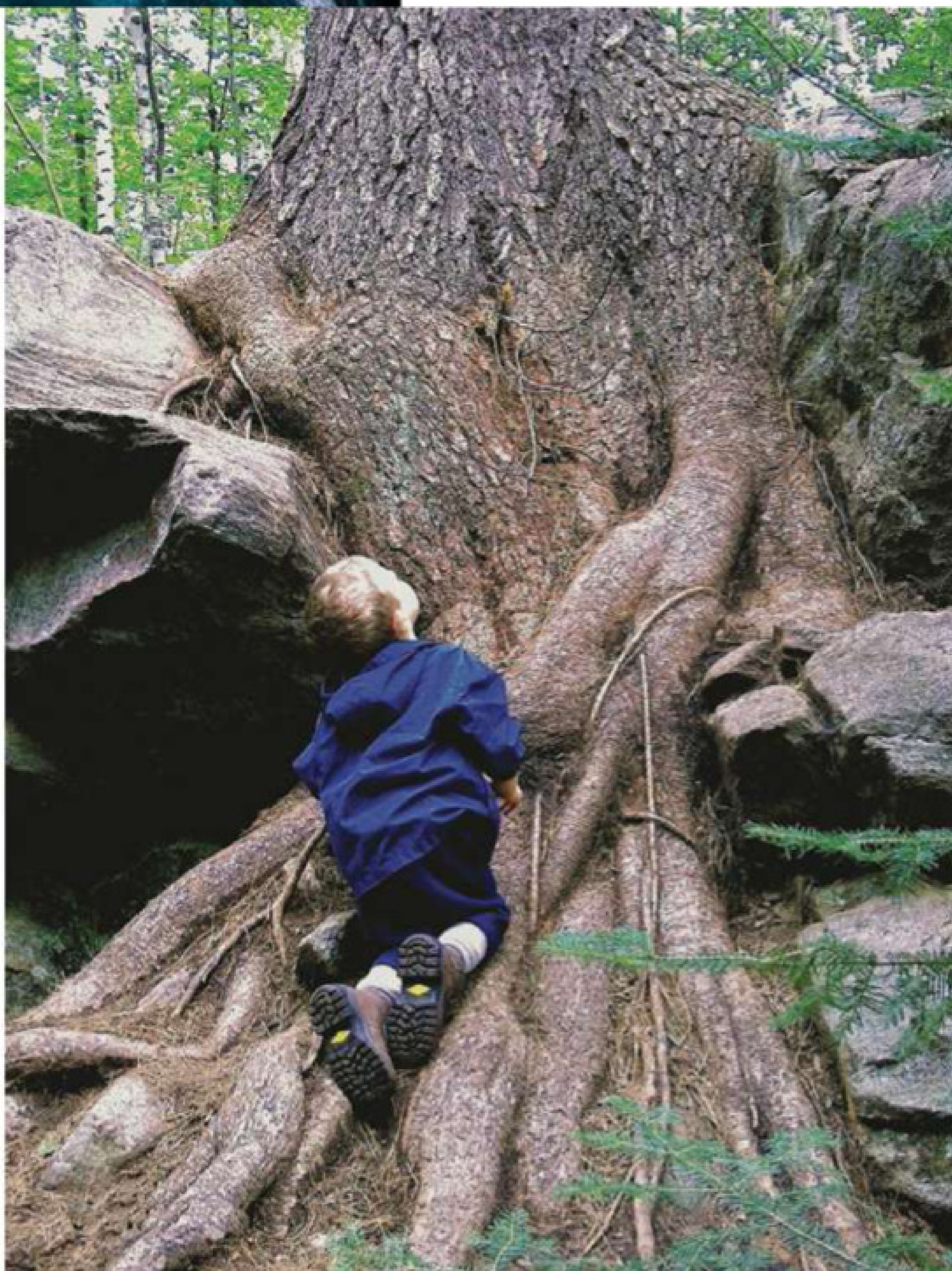
»  
**HONOURABLE  
MENTION**

*Dandelion*  
**Iulius Virca**

»  
AMATEUR  
**CONNECTING  
WITH NATURE**

*My Son Climbing  
a Tree*  
**John Crhak**

This candid moment beautifully captures the wonder and excitement of exploring nature, no matter what your age.







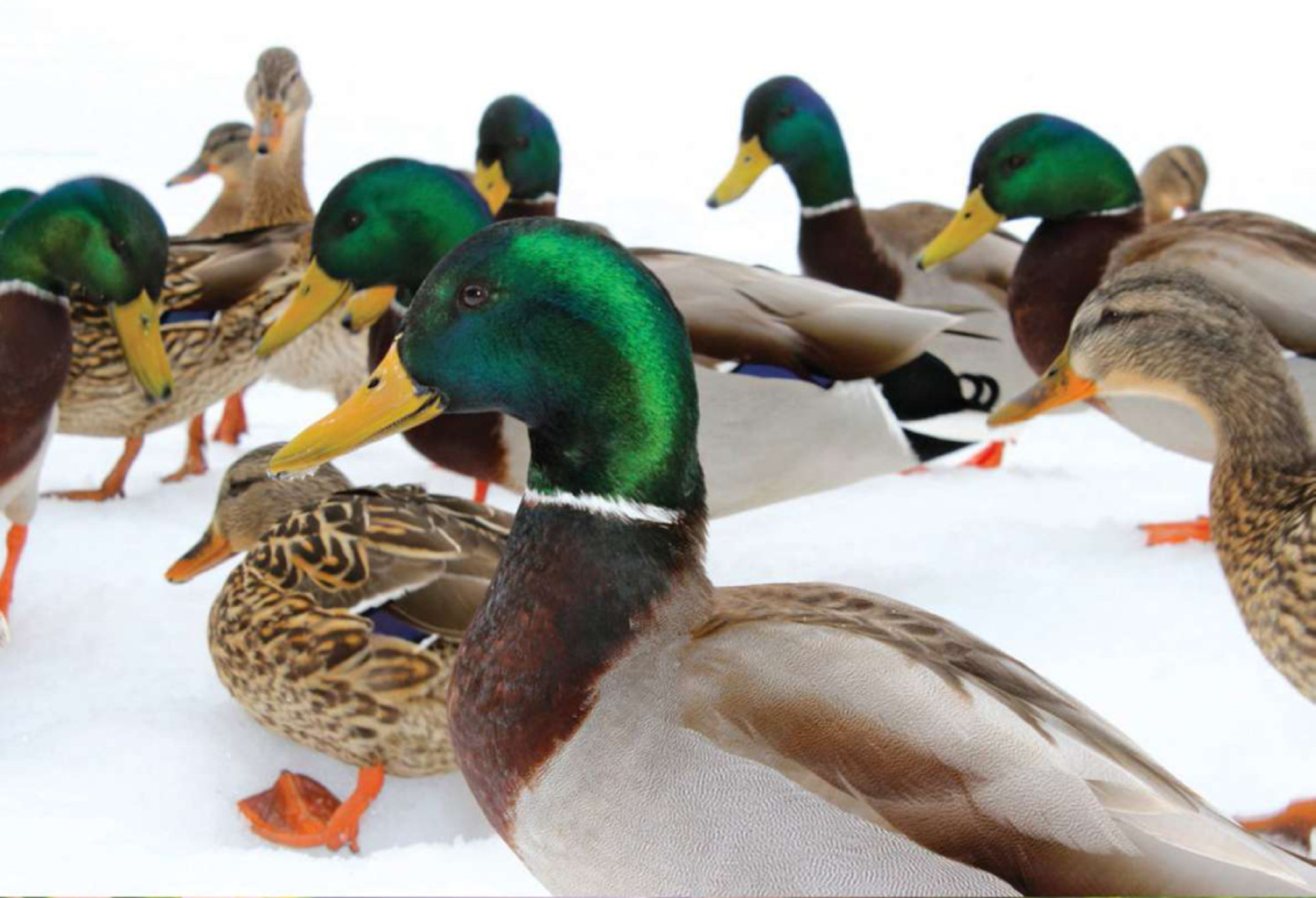
PROFESSIONAL  
**HOME IS  
HABITAT**

*Black Bear Cub*  
**Maria Koutzarova**

The wilderness is more than a place for wildlife. It's their home, providing the necessities of life, as Maria Koutzarova's playful image of a cub snacking on leaves reminds us.











**HONOURABLE  
MENTION**

*Early morning tide*  
**Richard Labelle**

«  
**AMATEUR  
FOCUS ON  
FAUNA**

*Mallard*

**Beth Springer**

Although this image is almost surreal, Beth says it was taken under ordinary circumstances. She and her family were tossing bread to ducks, bringing them closer with every toss. Soon, they were swarmed.

«  
**PROFESSIONAL  
CONNECTING  
WITH NATURE**

*Mother and Daughter*  
**Vanessa Vierra**

Our connection with nature is an important element in conservation. Vanessa Vierra's image extends that idea to include the connection that exists within families and between generations, reminding us of why we care about nature.





»  
**PROFESSIONAL  
FOCUS ON  
FAUNA**

*Wolf*  
**Alisha Friedland**

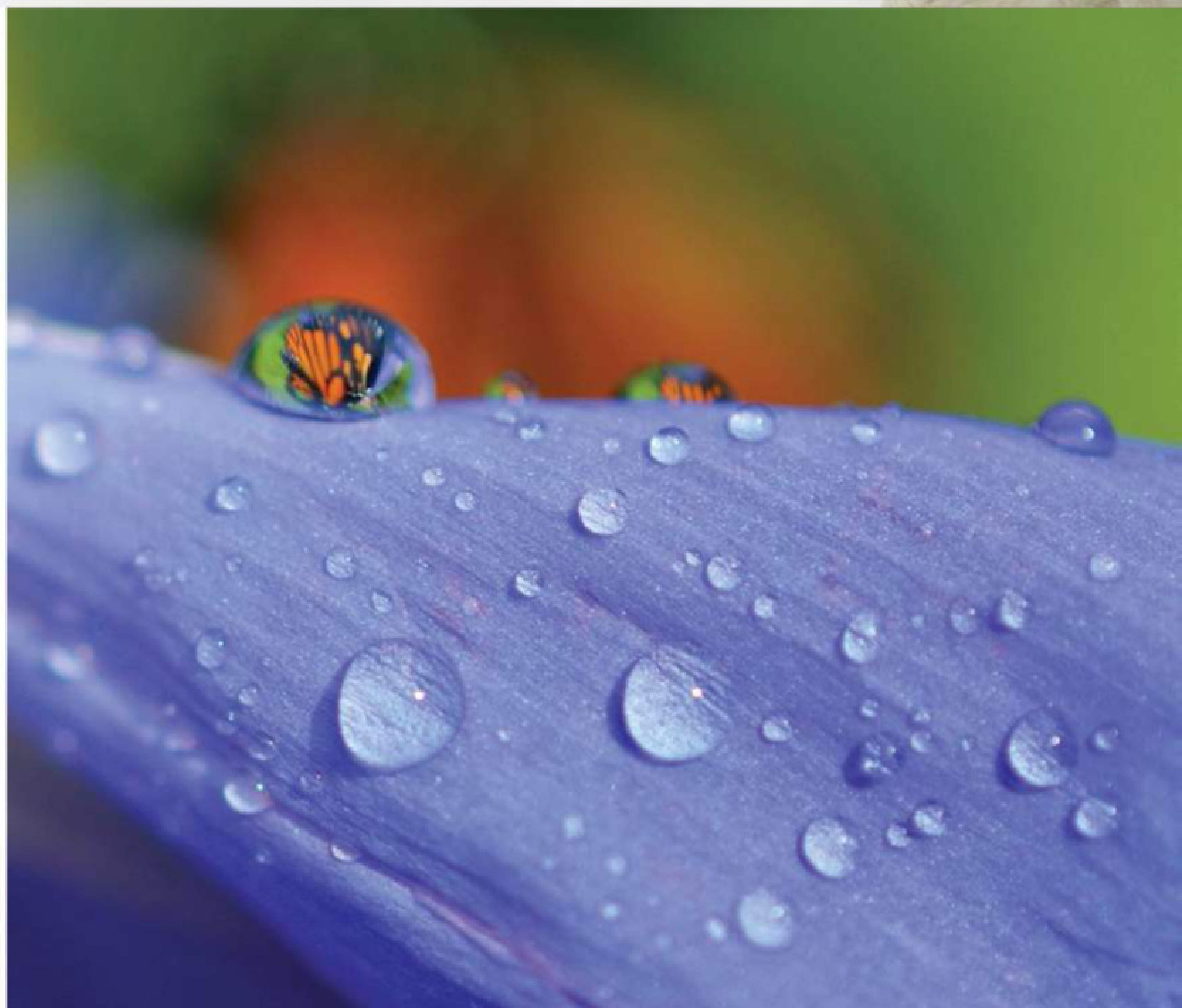
This image of prowling wolves speaks to the interaction between wildlife and people. The wolves react with both curiosity and caution to the presence of the photographer.



»  
**AMATEUR  
FINDING FLORA**

*Morning Glory*  
**Isabelle Marozzo**

Our judging panel was intrigued by Isabelle Marozzo's ability to capture two images in one with this creative photograph of a monarch butterfly photographed through a raindrop on the petal of a morning glory.





✿  
**HONOURABLE  
MENTION**

*Grizzly bear*  
**Chad Larsen**



✿  
**AMATEUR  
CANADIAN  
LANDSCAPES**

*Sun-Oka Beach*  
**Claude Robidoux**

With the melting of the snow, winter starts drawing to a close at Sun-Oka Beach in British Columbia's Okanagan Valley. For this image, Claude Robidoux used a long exposure to capture the contrasting movement of the clouds with the stillness of the water.







«  
**PROFESSIONAL  
FINDING FLORA**

*White Trout Lily  
(Dogtooth Violet)*  
**Larry Kowalchuk**

This image of a white trout lily was captured at Rock Glen Falls, near Arkona, Ont. A spring flower, these lilies point downward, requiring photographer Larry Kowalchuk to lie as flat as he could to get his winning shot.

»  
**HONOURABLE  
MENTION**

*Fox Jumping*  
**Denis Dumoulin**







»  
**AMATEUR  
HOME IS  
HABITAT**

*Burrowing Owl*  
**Alexandra Froese**

The ability to find good shelter is key to survival for many species. Alexandra Froese's photograph of a burrowing owl tucked away in its home captures that thought — and the fact that wildlife is often watching us, too.



«  
**HONOURABLE  
MENTION**

*Sense of Wonderment*  
**Kelly McConnell**





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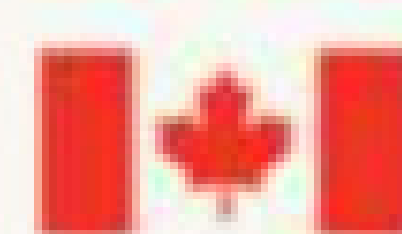
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Field Guide + Hinterland Who's Who + Your Garden



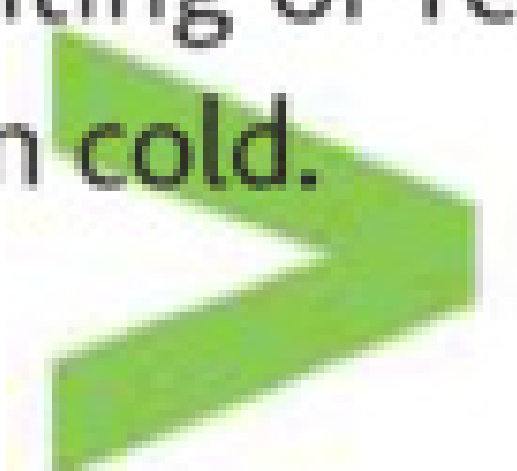
FIELD GUIDE

## Elk Root

(*Echinacea angustifolia*)

Illustration and text by Margaret Best

When the flu season peaks in the winter, the most popular herbal medicine in North America is echinacea. The extracts of this hardy plant are widely believed to stimulate the human immune system, thus preventing or reducing the symptoms of the common cold.





## FIELD GUIDE

But is this fact or fiction? Research in favour of the immuno-stimulant properties appears flimsy and not scientifically supported. What is known for sure, though, is that the plant species has been used for centuries by the First Nations of the North American plains for a wide range of healing purposes other than a cold or flu treatment.

The traditional name for echinacea — elk root — originated in observations of elk eating the whole plant (from roots to flower) when sick or injured. For people, echinacea's traditional medicinal use has been for external applications on burns, wounds, snake and insect bites. The roots, chewed or taken in a tea form, were used for pain relief, such as toothache and the discomfort of throat infections. The fact that throat infection is often linked to the start of cold may explain echinacea's popularity as a modern remedy.

Two forms of echinacea are found in Canada. The first, *Echinacea angustifolia*, is endemic on the Canadian prairies, thriving across Manitoba, Saskatchewan and Alberta in dry prairies and open woods.

*Echinacea purpurea*, also called a "cone flower," is a native of the eastern provinces that provide the moist settings it prefers. With tall blooms that add late summer colour to gardens, it has become a desirable perennial for cultivation in southern areas of Canada.



## HINTERLAND WHO'S WHO

# The Muskox

Did you know that, in Canada, we have a species that has survived here since the last Ice Age? The muskox lived alongside woolly mammoths and saber-toothed cats. But unlike these and other large mammals of that era, the muskox did not go extinct following the retreat of the ice that covered much of North America. It remains, having little changed since it arrived more than 90,000 years ago, in the most northern areas of the Arctic. — ANNIE LANGLOIS

## YOUR GARDEN

# Got the Gardener's Winter Blues?

Mid-winter blues often settle in for gardeners after the newest seed catalogues and promotions have been filed away. I suspect many are like me, hoarding enormous lists of seeds and making wish lists of desirable plants for the coming season. A few may even have doodles of garden plans on the back of napkins.

This unfettered desire to get something growing is not unusual, even though we're struggling through a season of low light and cold temperatures. To alleviate this condition, why not start seedlings at home?

There are many wildlife friendly plants that you can start within the first few weeks of March, or even as early as the end of February. (Educators take note, this is the time to start planning activities for, say, a butterfly garden in your schoolyard.) A few basics related to germination and culture of seeds and seedlings are all that are necessary for your success.

To begin, check your materials. Every container, tool and the media you use must be sterile, or at least very clean. Media usually comes pre-sterilized, but containers could use a good wipe down with alcohol to ensure no nasty pathogens exist. The germination container is most often covered to meet the high humidity requirements demanded by germination. If you don't use clear plastic food wrap, the covers must be washed down with a disinfectant. Most seeds also require a light dusting of media to cover them. Read the directions on the seed package for explicit directions. Seeds do not require light for germination. Warmth, darkness and moisture are the three main components of success, although there are a few exceptions.

Fungal growth is not uncommon under germination conditions, so pre-treat your media with a light dusting of either baking soda (sodium bicarbonate) or household cinnamon. Both work well and are natural products. The media temperature is relatively easy to obtain, just don't cook the seedlings or seeds. Try to keep the temperature between 25° C and 30° C.

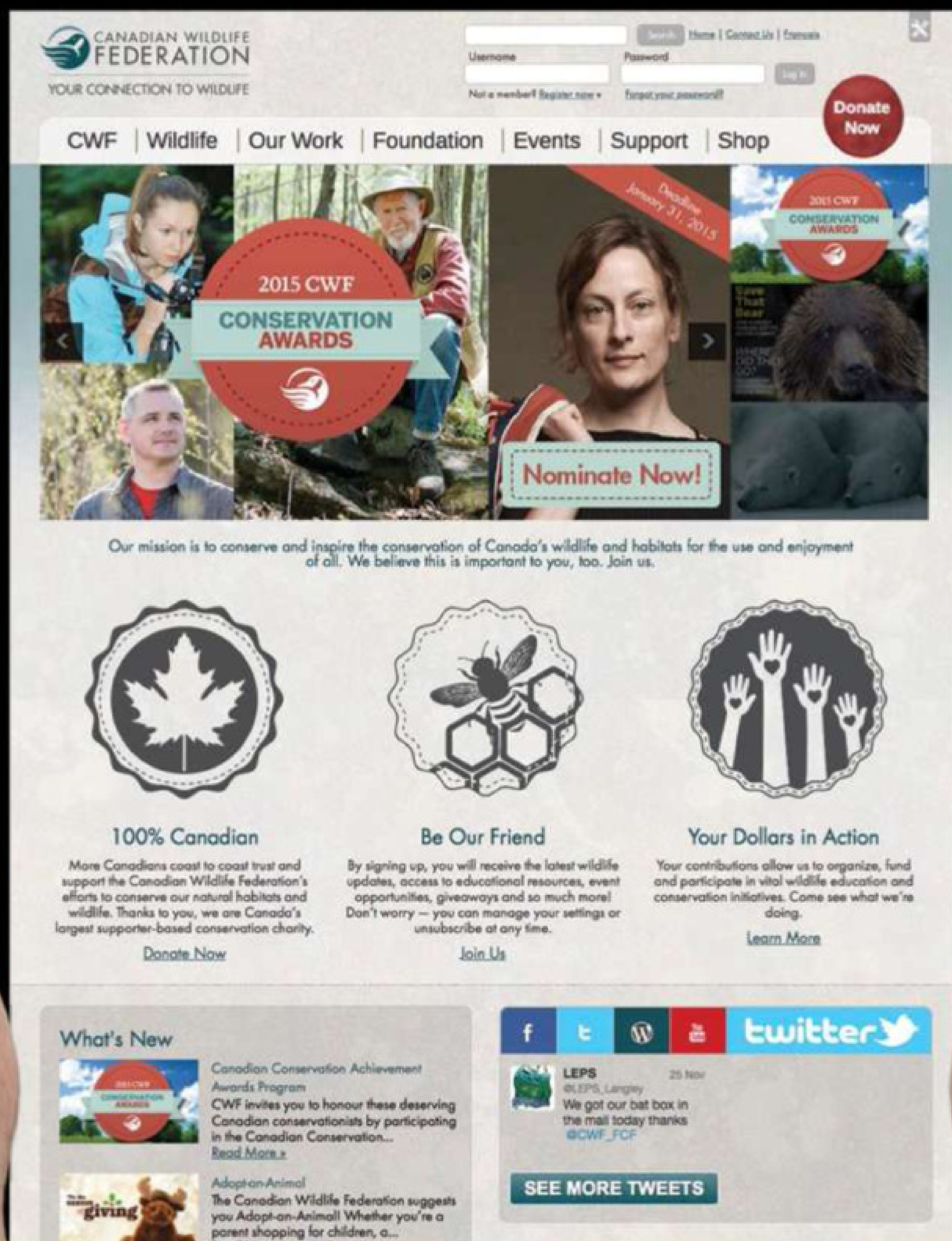
Once your crop has germinated, remove the cover(s) gradually to increase air circulation as well as to accommodate the height of the seedlings. Move your new babies into bright light gradually, and rotate the containers regularly to avoid stretched plants.

Consider starting a crop of milkweed for monarch butterflies, perhaps perennial asters and coneflowers, all which attract beneficial insects and provide butterfly habitat.

— KEN BEATTIE



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A person wearing a red jacket and a tan cap is sitting on a rocky outcrop in the foreground, looking down at a magazine. The background features a calm lake reflecting the surrounding landscape, which includes a dense forest of evergreen trees and a massive, rugged mountain with snow-dusted peaks under a clear sky.

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# Bulletin

NEWS FROM CWF  
JANUARY + FEBRUARY 2015

## Salute to the Sockeye

Millions of salmon returned to the Adam River this year. The event was celebrated with the Salute to the Sockeye festival — and CWF was there to share the story

THE CANADIAN PRESS/JOHN LEHMANN/GLOBE AND MAIL



## Salute to the Sockeye...

Every year millions of sockeye salmon swim back to their birthplace to reproduce. It's a miracle of nature that completes the life cycle of these incredible fish. One of the best places in the world to witness the event is along the gravel beds and clear waters of the Adams River in British Columbia's Roderick Haig-Brown Provincial Park.

The Adams River run takes place in the fall, peaking in mid-October. And it is celebrated every fourth year—the dominant year in the cycle of salmon migration—with the Salute to the Sockeye festival, hosted by the Adams River Salmon Society in partnership with B.C. Parks and Fisheries and Oceans Canada.

CWF was a proud supporter of this year's festival as its media sponsor. And while officials are still working on the final tally of the number of fish in this fall's run, we can report that the festival itself was an unqualified success, with more than 124,000 people visiting Roderick Haig-Brown park between Sept. 15 and Oct. 26.

Small wonder. The story of the Adams River salmon is exceptional. The sockeye that return each year face a gruelling 485-kilometre run from the mouth of the Pacific Ocean to the riverbeds of their birth. The journey requires them to swim up treacherous rapids, and the salmon do not eat as they navigate to their spawning grounds, following their senses of taste and smell as well as the Earth's magnetic field.

Once back home, the salmon pair up and search for clean gravel with fast-flowing

water. The female turns on her side and digs a nest with her fin. She lays about 4,000 eggs in this nest, called a "redd," which the male then fertilizes.

Within 10 days after spawning, the pair die, providing a protein source for other wildlife as well as nutrients for the ecosystem. The eggs hatch three to four months later. About 100 million of the hatchlings survive and venture from home about a year after birth, heading out to the ocean to feed, just as their ancestors did. They spend about three years in the ocean before returning to the river to reproduce.

It is critical to share the stories of the salmon with as many people as possible, and CWF welcomed the opportunity to get involved in the Salute to the Sockeye festival. We were onsite Oct. 5-13 with an educational display in the interpretive area. We also created a special website so that students, educators and the general public across Canada could share in the experience.

Our website is still online and includes a salmon quiz, a festival photo gallery and fish-themed activities. It also tackles some common questions about salmon life cycles. Check it out at [CanadianWildlifeFederation.ca](http://CanadianWildlifeFederation.ca). Just search "Salute to the Sockeye 2014" after you land on our homepage.

Finally, CWF commends all those involved for their dedication to conservation and education. We thank the 300,000 festival visitors and all our online supporters for helping honour this epic migration.

## Are You Ready for Below Zero?

CWF's winter education program ensures you and your students will make the most of the season

## Kids

have questions, no matter what the season. When it comes to winter, CWF is ready to help them find answers with the Below Zero program.

A resource for educators — both classroom teachers and those active in non-formal settings, such as naturalists, Scout or Guide leaders, and conservation officers — Below Zero promotes the understanding of wildlife under winter conditions. It features 46 complete lesson plans that can be adapted for any age, grade or subject.



### Wild About Birds

CWF is rolling out two new programs to help birds. The first is Wild About Birds. Launching this spring, it will be built around a new website, [WildAboutBirds.ca](http://WildAboutBirds.ca), which will feature expert advice, videos and other resources to keep birds visiting your backyard.

### CWF NEWS, PARTNERSHIPS AND INITIATIVES

## What's Happening

The federation is also launching two new birdseed brands: Songbird Medley and Vibrance are natural blends designed by Canada's foremost wildlife nutritionist, Deb McWilliams, and scientifically proven to maintain healthy wild bird populations. All CWF profits from the sales will be reinvested in bird

conservation. Coming soon to select retailers.

### Welcome Aboard

Meet James Bartam, CWF's new director of education. James came on board in September and brings a wealth of experience to one of the federation's key positions. Before joining CWF, he worked as education director of the Parks Canada

Palisades Stewardship Education Centre in Jasper National Park.

A teacher who has worked at high schools in the U.K., New Zealand and Canada, James also brings a broad base of international experience in education, conservation and business management to CWF. We're excited to be working with James — and





## Your Shot

Congratulations to Gaël Lafenêtre of Rimouski, Que. She won September 2014's By Popular Vote monthly photo contest with her richly coloured forest scene. The theme of the August contest was "Wild Life." The themes for the January and February contests are "Great White North" and "Hibernation," respectively.

Visit [WildPhotoContest.ca](http://WildPhotoContest.ca) for your chance to win a CWF prize package valued at \$100.



The program, which is national and bilingual, is also designed to be integrated into curriculum subjects, such art, health, language, math, music, physical education, science and social studies.

At the heart of Below Zero is a conceptual framework that encourages learners to develop understanding and turn it into positive action. It is built on four thematic sections: awareness and appreciation, habitat and ecological principles, adaptation, and responsible human actions. The materials for the program have all the information needed to complete the activities it describes, including objectives, methods, background, materials lists, procedures, vocabulary and suggestions for evaluation.

Most important, the activities are fun — a key factor in engaging young minds and encouraging them to connect with the natural world. For more information, visit the Education section of our website, [CanadianWildlifeFederation.ca](http://CanadianWildlifeFederation.ca) or email [cwfeducation@cwfc-fcf.org](mailto:cwfeducation@cwfc-fcf.org).

ISTOCK

hoping you'll get a chance to meet him soon, too.

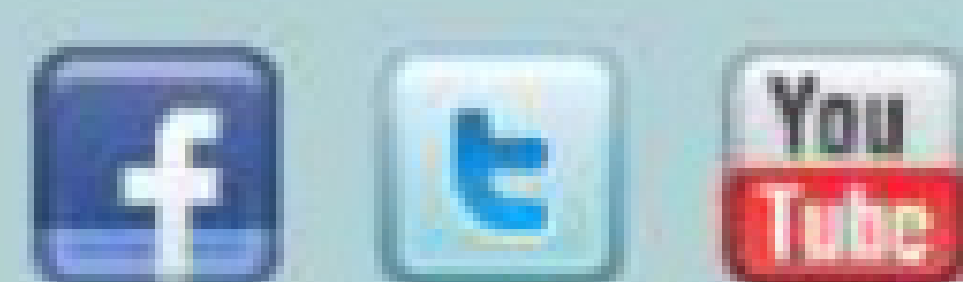
### Save the Date

Mark your calendars for April 9 and plan to attend the CWF's Goose Gala fundraiser at the Four Seasons Hotel in Toronto. Hosted by master of ceremonies Brent Butt, of "Corner Gas" fame, and featuring a special appearance by multi-platinum

award-winning singer Johnny Reid, the Goose Gala offers more than an opportunity to show your support for conservation. It will also be a party — and a great opportunity to come together and celebrate Canada's wilderness legacy and help protect it for future generations. For more information, contact Rachel Polite at [rachelp@cwfc-fcf.org](mailto:rachelp@cwfc-fcf.org)

## Connect

For more online wildlife news, tips, facts and photos, sign up for CWF's free monthly newsletter, *Wildlife Update*. Visit [CanadianWildlifeFederation.ca](http://CanadianWildlifeFederation.ca) and enter your e-mail address under "Get CWF News." You can also follow the Canadian Wildlife Federation on Facebook, Twitter and YouTube.







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**GENERATION NEXT**

*Sustainability is rooted in the traditional value of providing for future generations, says Claudia Li.*



# The New Tradition

*For Claudia Li, sustainability and heritage go hand in hand.*

Photograph by TJ Watt

**Conservation and sustainability are big issues, laden with science, data and long-range trends. But they are also personal.** Just ask Claudia Li at the Hua Foundation in Vancouver. She's integrating the conservation ethos with the heritage and traditions of the local Chinese community. And that's just for starters.

*Tell us about the Hua Foundation. What are your goals and current projects?* Hua Foundation is a grassroots non-profit a few friends and I started a year ago. Our mission is to build solutions for the Hua community, the ethnic Chinese community, around environmental sustainability and cultural heritage. Currently, we have three main programs. Our newest is the Choi Project, which focuses on bringing healthy, local Chinese food to our family dinner tables. We also have the Hua Ren Environmental Network, which connects community leaders on sustainability and social change issues.

Finally, there's Shark Truth, which is the project the Hua Foundation grew out of. It focuses on shark conservation, particularly around the shark-fin issue. One of our signature programs is the Fin-Free Wedding program, which has stopped 80,000 bowls of shark fin.

*Food sounds like a key issue. How did you get from sharks to the Choi Project?* A lot of our shark conservation supporters had started to ask, "What else can we do?" At the same time, I was trying to buy in-season food that was locally produced and free of pesticides and hormones for my family. I found myself having to choose between sustainable Western food and Chinese ingredients that came with little information about how and where they were produced.

The Choi Project — "choi" being leafy vegetables or greens — aims to close this gap through consumer education, community building and working with small businesses. We host workshops where elders teach a traditional dish. Youth then source sustainable ingredients. We've created a "seasonal choi guide," which talks about popular Chinese vegetables grown in southwestern B.C. and when they are in season. We're also working with a local greengrocer, Chinatown Supermarket, to develop a program to label more sustainable Chinese foods.

*How does the Hua Ren Environmental Network fit in?*

Hua Ren has about 70 members, both youth and elders, including business leaders, academics, artists and activists. We hold events and host online discussions so that people can share ideas and resources around environmental

or social issues. I'm the most excited for the potential of this network to elevate youth and debunk stereotypes.

*How did you become interested in sustainability activism?*

My parents are from Hong Kong, and I grew up in Canada. I've always felt like I've been navigating two worlds. My elders encouraged me to work hard and get a good job, a good livelihood in their eyes. But I've also been very engaged in social justice issues.

This caused an internal struggle for me. When friends and family found out I was a shark-fin activist, I'd get labelled as someone who cared more about animals and trees than our culture and heritage. But as I met more young people, especially Hua youth, I saw that this struggle wasn't particular to me.

My friends and I came to realize that concern for sustainability and social justice is rooted in our cultural value to provide a good future for the next generation. Many of us are the children of immigrants who worked hard to give us a good life. We see our foundation work as part of that value. We're working for the next generation.

*So, where will your next steps take you?*

We just moved into our very own office in Chinatown. Part of building community means creating space and time for brainstorming and collaboration. I've found that some of the best ideas surface over dinner or in a conversation at a party. We hope our headquarters can be a home for this kind of creativity and energy. 🍲





## By a Whisker

Every winter, from November to March, roughly 5,000 manatees congregate in scattered warm freshwater springs along the southern coast of Florida to escape the colder, potentially lethal, water temperatures of the nearby ocean. The manatee is unlike any animal I have observed and photographed in my three decades of wildlife photography. It is endearingly gentle, surprisingly unwary and comically photogenic. Besides this, I know of no other wild animal on Earth that will approach humans for no other reason than tactile stimulation — the desire to be stroked and scratched lightly. One time, a juvenile animal, a manatee “teenager,” swam over to me, wrapped his flippers around my lower leg and started to gently mouth my calf with his bristly snout. From my calf he moved up to my knee, and from there, up to my thigh. He ended the encounter by gently brushing my chin with his whiskers. I laughed so hard I thought I might choke on my snorkel. My wife now jokingly calls me the “manatee whisperer.” 🐬

—Wayne Lynch

*Editor's Note: With this issue of Canadian Wildlife, we're introducing a new back-page feature based on stories and images from Wayne Lynch, one of Canada's best-known wildlife photographers. Ever wondered what that gig is like? Now you can find out with Wayne's work from across Canada — and around the world.*



Deadline is  
January 31<sup>st</sup> 2015



**Honour their dedication.  
Nominate a conservationist today.**

Visit [CanadianWildlifeFederation.ca/awards](http://CanadianWildlifeFederation.ca/awards)

*One of six recipients in 2012, Jean Robitaille was  
awarded for his contribution to conservation and  
wise use of recreational fisheries in Canada.*







# Walk for Wildlife

April 10 - May 31, 2015



This spring, take a walk on the **WILD** side!

It might be winter now, but the Canadian Wildlife Federation is already planning for spring hiking! From April 10<sup>th</sup> through May 31<sup>st</sup>, you're invited to take a walk on the wild side during our annual Walk For Wildlife. Whether you're hiking trails or wandering through the wilderness, helping support our national conservation efforts is as easy as a walk in the park!

To learn how you can start walking on behalf of Canadian wildlife, visit [WalkForWildlife.ca](http://WalkForWildlife.ca).